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PATENT SPECIFICATION

EXAMINER'S

COPY

Div. 35
448,519

Application Date: Dec. 31, 1934. No. 37419/34.

Complete Specification Left: Dec. 30, 1935.

Complete Specification Accepted: June 10, 1936.



PROVISIONAL SPECIFICATION

Improvements in and relating to the Packing of Mattresses, Rugs or like Compressible Articles in Bags or other Containers

We, E. S. & A. ROBINSON LIMITED, a Company organised under the laws of Great Britain, CHARLES EWART WEBLEY, and KENNETH WILLIAM DAVIES, both British subjects, all of 1, Redcliffe Street, Bristol, in the City and County of Bristol, do hereby declare the nature of this invention to be as follows:—

This invention relates to packing soft overlay mattresses and the like in paper, cloth or like bags, tubes or containers.

It is customary to wrap mattresses in cloth or paper sheets by rolling them in with such sheet. Hitherto it has not been found feasible to pack mattresses in paper bags or tubes owing to the fact that in order to afford protection, the mattress must snugly fill the bag so that the exterior thereof is smooth. A rolled mattress is extremely difficult to insert in a paper bag and if the mattress is previously tied then the package remains loose.

An object of the present invention is to provide a convenient method and apparatus whereby soft overlay mattresses may be expeditiously packed in bags or containers, preferably paper bags, so that the mattress, when inserted, completely fills the bag.

The invention consists in a method of packing mattresses in which a tube or guide is provided over one end of which is held or mounted a paper bag or tube to receive the mattress, the mattress being introduced through the other end and pushed through the tube or guide and into the bag or tube in longitudinal extension therewith.

According to one form an inclined metal tube or guiding device is mounted on a portable stand and is provided with clamping or clipping means, preferably in the form of a contractible band for securing the paper bag over the end of the tube.

According to another form a tube or guiding device may be mounted vertically so that the mattresses may be introduced on one floor and received in the bags upon the floor below; or the packing may be arranged on a staging.

In carrying the invention into effect according to one convenient mode for

packing soft overlay mattresses of 4' 6" in width or under, and of the usual length, a sheet metal tube of some 23" in diameter is detachably mounted upon a stand or frame. The frame may comprise four legs and strut or tie members secured thereto by means of wing nuts or the like so that the frame may be collapsed if desired. The tube may be provided with a pair of spaced bands on each of which stud members are fixed on either side for engaging the upper ends of the frame or stand members. When mounted on the stand the axis of the tube should be inclined somewhat in a downward direction and means may be provided for adjusting the angle, if desired. The upper or feeding end of the tube is flared for convenience in reception of a rolled mattress.

Towards the lower end of the tube clamping means are provided for the bag. In the preferred form the clamp is in the form of a split ring or band of sheet metal which has three or more stirrup or plate members secured to it. The stirrup members are slotted circumferentially to receive studs on the ends of flexible or resilient bracket tongues secured to the tube and protruding into the spaces between the stirrup members and the clamping ring, so that the clamping ring is kept floated concentric to the tube. The slotted connection between the resilient tongues and the stirrups enables the clamping ring to be drawn tightly round the tube. For the purpose of tightening the ring upon the tube and an inserted bag mouth, a lever is pivotally connected to lugs on one end of the ring and to lugs on the other end of the ring by a pivoted link element in the known manner whereby the ends of the ring may be drawn together or separated quickly.

A platform is provided adjacent the lower end of the tube and at a slightly lower level, the angle of the inclination of the platform corresponding with that of the tube, so that the bags are supported and prevented from collapsing as the mattress is passed into them. For the purpose of pushing the mattress through the tube a ram is provided which may com-

[Price 1/-]

prise a wooden disc of a diameter adapted loosely to slide through the tube, and a handle or rod braced in axial alignment with the disc.

- 5 Any convenient form and suitable size of paper bag may be employed but it is preferred to provide for the purpose of the invention a two-ply paper bag having deep gusset folds and the end closed by stitching which passes through a reinforcing tape. With deep gussets and the reinforced closure, the mattress, when filled into the bag, fits well up to the end and the length of the bag (which may be 10 some 78" for a 4' 6" mattress) is such that the open end walls are folded down upon the end of the mattress and sealed by a 15 pasted label, paper disc, or any other known adhesive means.
- 20 In operation the mouth of the bag is introduced over the end of the tube and under the clamping means which are drawn tight. One end of a mattress is taken and rolled inwards and the rolled body 25 inserted into the flared mouth of the tube through which it is pushed by the ram and into the bag in longitudinal extension of the tube, the tube serving to prevent the mattress from unrolling while it is entering the bag. When the mattress is free of 30 the tube and entirely accommodated with-

in the bag it expands and snugly fits its paper container. While the mattress is passing from the tube into the bag the package is supported on the platform so 35 there is no fear of tearing or collapse of the bag.

Where an open-ended tube is employed instead of a bag, both ends are closed by folding over the marginal ends of the tube 40 and adhesively securing such or by applying a label, disc or tape.

In carrying the invention into effect according to another convenient mode, a tube of the character above described is 45 mounted in an aperture in the floor or a staging. On the floor below, or below the staging, an attendant will place a bag over the lower end of the tube but in this case it need not be necessary to provide 50 any clip means and, furthermore, the bag may be slid over the tube to a considerable extent. Mattresses are introduced into the upper end of the tube and pushed through, as before, by a ram. 55

Where the distance between floors is excessive for the purpose in question an appropriately long tube may be employed or the operator receiving the filled bag or tube may work on a staging. 60

Dated this 31st day of December, 1934.

MARKS & CLERK.

COMPLETE SPECIFICATION

Improvements in and relating to the Packing of Mattresses, Rugs or like Compressible Articles in Bags or other Containers

- We, E. S. & A. ROBINSON LIMITED, a Company organised under the laws of Great Britain, CHARLES EWART WEBLEY, and KENNETH WILLIAM DAVIES, both 65 British subjects, all of 1, Redcliffe Street, in the City and County of Bristol, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described 70 and ascertained in and by the following statement:—

- This invention relates to packing soft overlay mattresses, quilts, rugs and like compressible and coilable articles in paper, 75 cloth or like bags or tubular containers. It is customary to wrap mattresses in cloth or paper sheets by rolling them in such sheets. Packing mattresses in bags or the like is desirable from the point of view 80 both of saving in time and the convenience and security in sealing but hitherto such has not been found commercially feasible owing to the fact that in order to provide a package which may be handled easily 85 and will withstand transit usages, the mattress must snugly fill the bag so that the exterior thereof is smooth. A rolled

mattress is difficult to insert in a paper bag and if the mattress is previously tied in a small enough roll to permit its introduction into a bag then a loose package will result. 90

An object of the present invention is to provide improvements whereby soft overlay mattresses and the like may be expeditiously packed in bags, tubes or containers (preferably paper bags), so that the mattresses when inserted completely fill the bags. 95

The invention consists in a method of 100 packing mattresses, quilts, rugs or like compressible and coilable articles in bags or tubular containers, comprising rolling the article into coiled form, inserting the coiled article into one end of a tube to retain its coiled form and pushing the 105 article through the tube into the bag or container, located over the other end of the tube, in which the article is free to expand radially.

The invention also consists in apparatus 110 for packing mattresses, quilts, rugs or like compressible and coilable articles in a bag or tubular container, comprising a tube

of appropriate diameter into one end of which the coiled article is introduced, and a floating contractible band or ring situated around the other end of the tube for

5 clamping a bag or tubular container in position thereon to receive the article when the latter is pushed through the tube.

In the accompanying drawings:—

Fig. 1 is a side elevation of a packing

10 tube according to the invention mounted on a stand

Fig. 2 is an end elevation of the tube shown in Fig. 1 while Fig. 3 is a fragmentary enlarged detail view showing part

15 of the floating clamping ring seen in Figs. 1 and 2.

Fig. 4 is a side view of a tube and stand such as seen in Fig. 1 in position for delivering bags onto an inclined platform

20 or ramp.

Fig. 5 is a perspective view of a pusher for use according to the invention.

In carrying the invention into effect according to one convenient mode for packing soft overlay mattresses of 4' 6" in width or under, and of the usual length, a sheet metal tube 1 of some 23" in diameter is detachably mounted upon a stand or frame 2. The frame may comprise four

30 legs and strut or tie members secured thereto by means of wing nuts or the like so that the frame may be collapsed if desired. The tube may be provided with a pair of spaced bands 3 on each of which

35 stud members 4 are fixed on either side for engaging the upper ends of the frame or stand members. When mounted on the stand the axis of the tube should be inclined somewhat in a downward direction

40 and means may be provided for adjusting the angle, if desired. The upper or feeding end of the tube is flared as at 5, for convenience in reception of a rolled mattress.

Towards the lower end of the tube clamping means are provided for the bag. In the preferred form the clamp consists of a split ring or band of sheet metal 6 which has three or more stirrup or plate

50 members 7 secured to it. The stirrup members are slotted circumferentially as at 8 to receive studs 9 on the ends of flexible or resilient bracket tongues 10 secured to the tube and protruding into the spaces

55 between the stirrup members 7 and the clamping ring 6, so that the clamping ring is floated concentrically to the tube. The slotted connection between the resilient tongues and the stirrups enables the clamping ring to be drawn tightly round

60 the tube and released. For the purpose of tightening the ring upon the tube and an inserted bag mouth, a hand lever 11 is pivotally connected to lugs 12 on one

65 end of the ring and to lugs 13 on the

other end of the ring by a pivoted link element 14 whereby the ends of the ring may be drawn together or separated quickly by operating the hand lever toward or away from the ring.

A platform 15 is provided adjacent the lower end of the tube and at a slightly lower level, the angle of the inclination of the platform corresponding with that of the tube, so that the bags are supported

75 and prevented from collapsing as the mattress is passed into them. For the purpose of pushing the mattress through the tube a ram (Fig. 5) is provided which may comprise a wooden disc 16 of a diameter

80 adapted loosely to slide through the tube, and a handle or rod 17 braced in axial alignment with the disc.

Any convenient form and suitable size of paper bag may be employed but it is preferred to provide for the purpose of the invention a two-ply paper bag having deep gusset folds and the end closed by stitching which passes through a reinforcing tape. With deep gussets and the

90 reinforced closure, the mattress, when filled into the bag, fits well up to the end and the length of the bag (which may be some 78" for a 4' 6" mattress) is such that the open end walls are folded down upon

95 the end of the mattress and sealed by a pasted label, paper disc, or any other known adhesive means.

In operation the mouth of the bag is introduced over the end of the tube and

100 under the clamping ring 6 which is drawn tight by the handle 11. One end of a mattress is taken and rolled inwards into coiled form and the rolled body inserted into the flared mouth 5 of the tube 1

105 through which it is pushed by the ram and into the bag in longitudinal extension of the tube, the tube serving to prevent the mattress from unrolling while it is entering the bag. When the mattress is

110 free of the tube and entirely accommodated within the bag it expands radially and snugly fits its paper container. While the mattress is passing

115 from the tube into the bag the package is supported on the platform so there is no fear of tearing or collapse of the bag. After the mattress has entered the bag, the ring 6 is unclamped to release the package the open end of which may be

120 folded down and sealed in any suitable manner.

Where an open-ended paper or other tube is employed instead of a bag, both ends are closed by folding over the

125 marginal ends of the tube and adhesively securing such or by applying a label, disc or tape.

In carrying the invention into effect according to another convenient mode, a 130

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tube of the character above described is mounted in an aperture in the floor or a staging. On the floor below, or below the staging, an attendant will place a bag 5 over the lower end of the tube and under the clamping ring 6 which is drawn tight by the manipulation of handle 11. Mattresses are introduced into the upper end of the tube and pushed through, as 10 before, by a ram.

Where the distance between floors is excessive for the purpose in question an appropriately long tube may be employed or the operator receiving the filled bag or 15 tube may work on a staging.

Where rolled or compressed articles of somewhat different diameter are to be handled the tube may be made of adjustable diameter by making it in longitudinal split form the longitudinal edges 20 or which overlap and are secured in one or other of the series of different positions calculated to increase or decrease the diameter of the tube, as for example by 25 providing pin and slot connections or a series of spaced holes for the reception of bolts or screws.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to 30 be performed, we declare that what we claim is:—

1. A method of packing mattresses, quilts, rugs or like compressible and coil- 35 able articles in bags or tubular containers, comprising rolling the article into coiled form, inserting the coiled article into one end of a tube to retain its coiled

form and pushing the article through the tube into the bag or container, located 40 over the other end of the tube, in which the article is free to expand radially.

2. Apparatus for packing mattresses, quilts, rugs or like compressible and coil- 45 able articles in a bag or tubular container, comprising a tube of appropriate diameter into one end of which the coiled article is introduced, and a floating contractible band or ring situated around the other 50 end of the tube for clamping a bag or tubular container in position thereon to receive the article when the latter is pushed through the tube.

3. Apparatus as claimed in Claim 2, wherein the tube is mounted on a collapsible stand. 55

4. Apparatus as claimed in Claim 2 or 3, and comprising a pusher consisting of a disc or flat piece on the end of a rod or 60 handle.

5. Apparatus as claimed in Claim 2, 3 or 4, and comprising an inclined ramp or platform on which the filled bag or container is supported.

6. A package comprising a bag or 65 tubular container having a mattress, quilt, rug or like compressible and coilable article packed therein by the method claimed in Claim 1 or by means of the apparatus claimed in Claim 2.

7. Apparatus for packing mattresses, quilts, rugs or the like, substantially as described with reference to the accom- 70 panying drawings.

Dated this 30th day of December, 1935.
MARKS & CLERK.

53/430

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ROBINSON LTD et al.
448,519 COMPLETE SPECIFICATION

June 10, 1936

SHEET

[This Drawing is a reproduction of the Original on a reduced scale.]

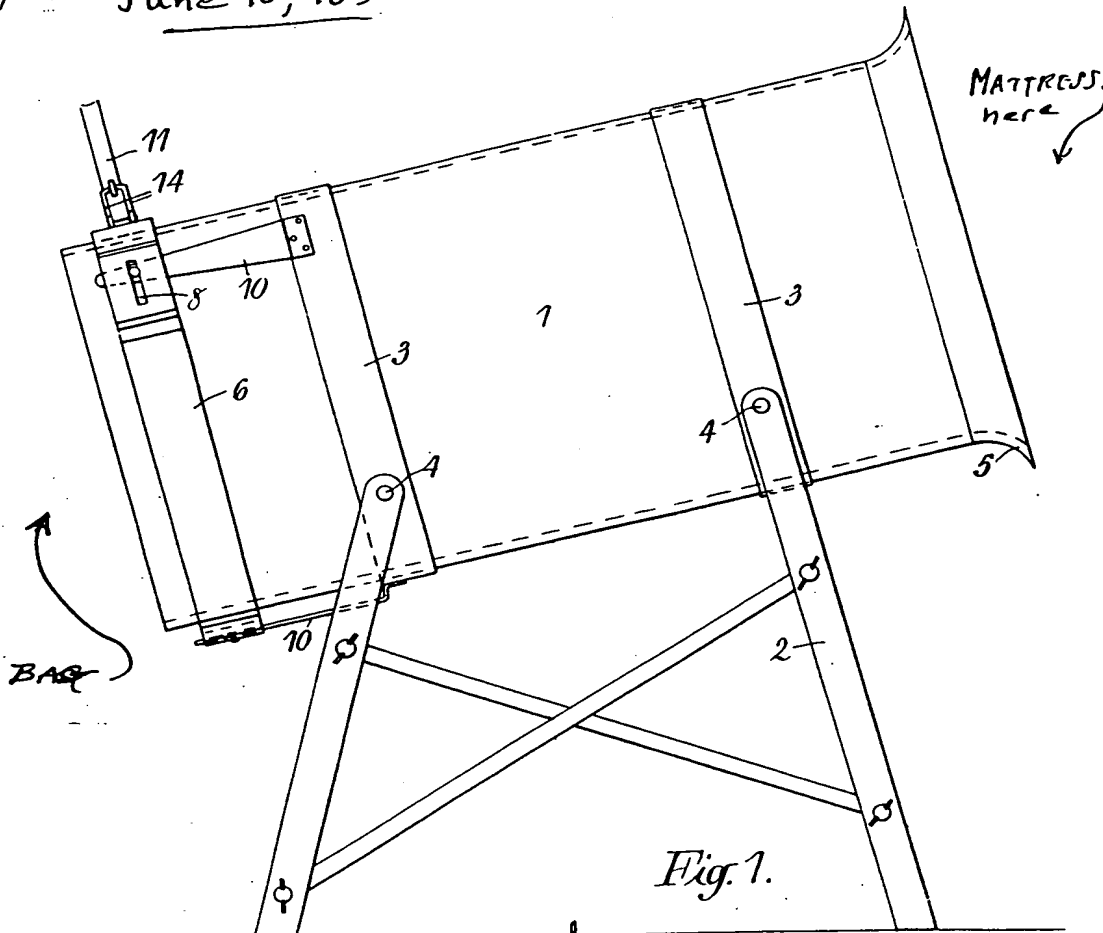
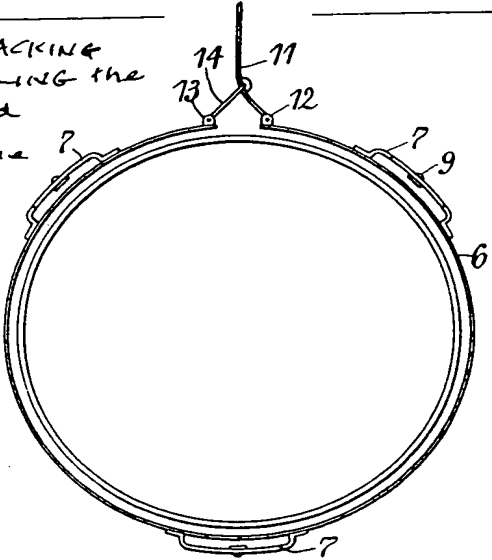


Fig. 1.

METHOD OF PACKING
MATTRESSES: Rolling the
article into coiled
form, inserting the
coiled article
into one end
of a tube to
retain its
coiled form and
pushing the
article through
the tube into
the BAG.



Mattress expands Fig. 2.
in the BAG.

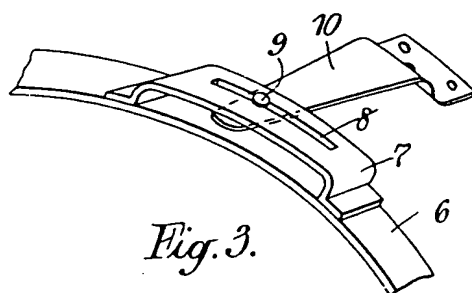


Fig. 3.

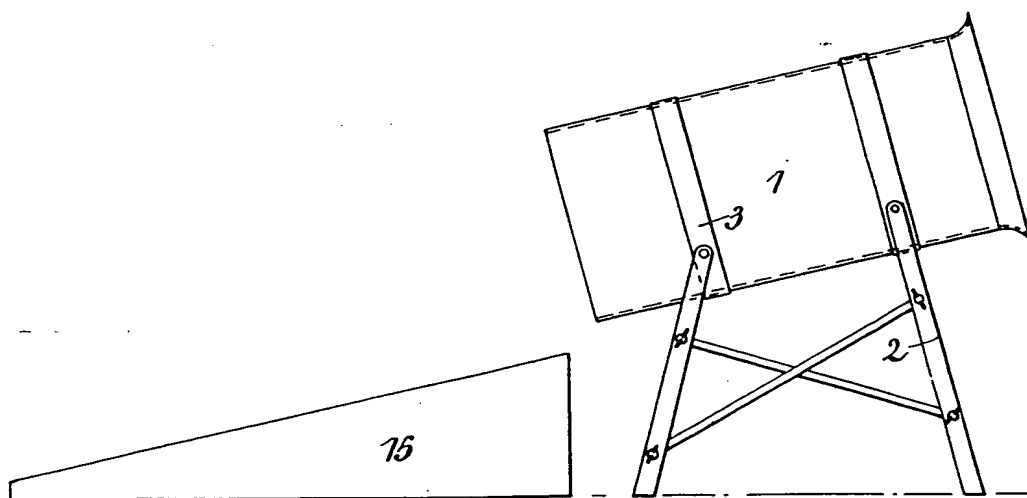


Fig. 4.

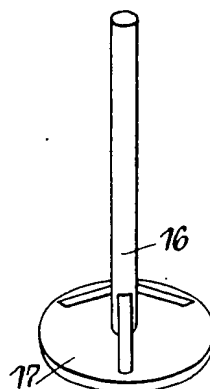


Fig. 5.